

Cont'd
E1

wherein asperities of a surface of said crystalline semiconductor thin film are formed by said laser light, and said asperities are flattened by said second heat treatment.

sub G1
E2

17. (Amended) A method of fabricating a semiconductor device comprising:
- adding an element for facilitating crystallization of an amorphous semiconductor thin film to a part or an entire region of the amorphous semiconductor thin film;
 - carrying out a first heat treatment to transform the part or the entire region of the amorphous semiconductor thin film into a crystalline semiconductor thin film;
 - irradiating a laser light to said crystalline semiconductor thin film; and
 - carrying out a second heat treatment for the crystalline semiconductor thin film in a reducing atmosphere including a halogen element after the irradiation of said laser light,
- wherein asperities of a surface of said crystalline semiconductor thin film are formed by said laser light, and said asperities are flattened by said second heat treatment.

sub G1
E3

20. (Amended) A method of fabricating a semiconductor device comprising:
- adding an element for facilitating crystallization of an amorphous semiconductor thin film to a part or an entire region of the amorphous semiconductor thin film;
 - carrying out a first heat treatment to transform the part or the entire region of the amorphous semiconductor thin film into a crystalline semiconductor thin film;
 - carrying out a second heat treatment of irradiating the crystalline semiconductor thin film with ultraviolet light or infrared light; and
 - carrying out a third heat treatment for the crystalline semiconductor thin film at 900 to 1200 °C in a reducing atmosphere after the second heat treatment.

sub G1
E4

22. (Amended) A method of fabricating a semiconductor device comprising:
- adding an element for facilitating crystallization of an amorphous semiconductor thin film to a part or an entire region of the amorphous semiconductor thin film;

cont'd
E4

carrying out a first heat treatment to transform the part or the entire region of the amorphous semiconductor thin film into a crystalline semiconductor thin film;
carrying out a second heat treatment of irradiating the crystalline semiconductor thin film with ultraviolet light or infrared light; and
carrying out a third heat treatment for the crystalline semiconductor thin film in a reducing atmosphere including a halogen element after the second heat treatment.

28. (Amended) A method of fabricating a semiconductor device comprising:
adding an element for facilitating crystallization of an amorphous semiconductor thin film to at least a portion of the amorphous semiconductor thin film;
carrying out a first heat treatment to transform the at least a portion of the amorphous semiconductor thin film into a crystalline semiconductor thin film; and
irradiating a laser light to said crystalline semiconductor thin film; and
carrying out a second heat treatment for the crystalline semiconductor thin film at 900 to 1200 °C in an atmosphere containing hydrogen therein after the irradiation of said laser light,
wherein asperities of a surface of said crystalline semiconductor thin film are formed by said laser light, and said asperities are flattened by said second heat treatment.

sub G1
E5

30. (Amended) A method of fabricating a semiconductor device comprising:
forming a semiconductor film comprising silicon over a substrate;
crystallizing said semiconductor film;
irradiating a laser light to the crystallized semiconductor film; and
subsequently heating the crystallized semiconductor film provided with an oxide formed over a surface thereof in an atmosphere which reduces said oxide formed over said surface,
wherein asperities of a surface of the crystallized semiconductor film are formed by said laser light, and said asperities are flattened by said heating.

sub G1
E6

31. (Amended) A method of fabricating a semiconductor device comprising:
forming a semiconductor film comprising silicon over a substrate;

crystallizing said semiconductor film;

irradiating a laser light to the crystallized semiconductor film; and

subsequently heating the crystallized semiconductor film provided with an oxide formed over a surface thereof in an atmosphere which reduces said oxide formed over said surface,

wherein said atmosphere comprises hydrogen, and

wherein asperities of a surface of the crystallized semiconductor film are formed by said laser light, and said asperities are flattened by said heating.

32. (Amended) A method of fabricating a semiconductor device comprising:
forming a semiconductor film comprising silicon over a substrate;
irradiating a laser light to said semiconductor film to crystallize said semiconductor film;

etching a surface of the crystallized semiconductor film after the irradiation of said laser light to remove an oxide therefrom;

heating the crystallized semiconductor film in a reducing atmosphere after said etching step to form a flattened surface of the crystallized semiconductor film.

33. (Amended) A method of fabricating a semiconductor device comprising:
forming a semiconductor film comprising silicon over a substrate;
irradiating a laser light to said semiconductor film to crystallize said semiconductor film;
treating a surface of the crystallized semiconductor film with hydrofluoric acid after the irradiation of said laser light to remove an oxide therefrom;

heating the crystallized semiconductor film in a reducing atmosphere after said treating step to form a flattened surface of the crystallized semiconductor film.

34. (Amended) A method of fabricating a semiconductor device comprising:
forming a semiconductor film comprising silicon over a substrate;
crystallizing said semiconductor film;
irradiating a laser light to the crystallized semiconductor film;

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subsequently heating the crystallized semiconductor film provided with an oxide formed over a surface thereof at a temperature of 900 to 1200 °C in an atmosphere which reduces said oxide formed over said surface,

wherein asperities of a surface of the crystallized semiconductor film are formed by said laser light, and said asperities are flattened by said heating.

Contd
E6

35. (Amended) A method of fabricating a semiconductor device comprising:
forming a semiconductor film comprising silicon over a substrate;
crystallizing said semiconductor film;
irradiating a laser light to the crystallized semiconductor film;
subsequently heating the crystallized semiconductor film provided with an oxide formed over a surface thereof at a temperature of 900 to 1200 °C in an atmosphere which reduces said oxide formed over said surface,

wherein said atmosphere comprises hydrogen, and

wherein asperities of a surface of the crystallized semiconductor film are formed by said laser light, and said asperities are flattened by said heating.